

Claims

[c1] What is claimed is:

1.A system for magnetizing one of a plurality of substantially non-magnetized blocks disposed on a plate of a magnet assembly used in an MRI device, comprising: first and second arm portions operably coupled together; and

a first electromagnetic coil disposed on a first end of the first arm portion, wherein the first electromagnetic coil is configured to generate a magnetic field that propagates from the first electromagnetic coil through at least one non-magnetized block and the plate and further through the first and second arm portions to magnetize the block.

[c2] 2.The system of claim 1, further comprising a bracket coupled between the first and second arms portions and a movable portion operably coupled to the bracket, wherein an air gap is defined between the first and second arm portions, the moveable portion being configured to be positioned within the air gap to form a magnetic field path between the first and second arm portions.

- [c3] 3.The system of claim 1, wherein the bracket is constructed from a non-magnetic material.
- [c4] 4.The system of claim 1, wherein the movable portion is constructed from iron or an alloy containing iron.
- [c5] 5.The system of claim 1, wherein the first electromagnetic coil generates a magnetic field having magnitude of 3–4 Tesla.
- [c6] 6.The system of claim 1, wherein the first and second arm portions are constructed from iron or an alloy containing iron.
- [c7] 7.The system of claim 1, wherein the first electromagnetic coil has a contacting surface area greater than or equal to a contacting surface area of the block, wherein the contacting surface of the first electromagnetic coil is disposed adjacent the contacting surface of the block during magnetization of the block.
- [c8] 8.The system of claim 1, further comprising a voltage source operably coupled to the first electromagnetic coil, the voltage source inducing the first electromagnetic coil to generate a magnetic field.
- [c9] 9.The system of claim 1, wherein the first arm portion has a length greater than or equal to the diameter of the

plate.

- [c10] 10. The system of claim 1, wherein a distance between the first electromagnetic coil and the second arm is substantially equal to the combined thickness of the block and the plate.
- [c11] 11. The system of claim 1, further comprising:
a second electromagnetic coil disposed on a first end of the second arm portion, wherein the second electromagnetic coil is configured to generate a magnetic field that propagates from the second electromagnetic coil through the first and second arm portions and at least one non-magnetized block and the plate to magnetize the block.
- [c12] 12. A method for magnetizing at least one of a plurality of substantially non-magnetized blocks disposed on a plate of a magnet assembly used in an MRI device, comprising:
disposing first and second arm portions proximate a first non-magnetized block and the plate, respectively,
wherein a first electromagnetic coil is coupled to the first arm portion; and
energizing the first electromagnetic coil to generate a first magnetic field that propagates from the first electromagnetic coil through the first non-magnetized block

and the plate and further through the first and second arm portions to magnetize the first block.

[c13] 13.The method of claim 12, further comprising:
disposing first and second arm portions proximate a second non-magnetized block and the plate, respectively, wherein a first electromagnetic coil is coupled to the first arm and the first electromagnetic coil is disposed adjacent the second non-magnetized block; and energizing the first electromagnetic coil to generate a second magnetic field that propagates from the first electromagnetic coil through the second non-magnetized block and the plate and further through the first and second arm portions to magnetize the second block.

[c14] 14.The method of claim 12, wherein the first electromagnetic coil generates the first magnetic field having magnitude of 3–4 Tesla.

[c15] 15.The method of claim 12, further comprising de-energizing the first electromagnetic coil after the first electromagnetic coil as been energized for a predetermined amount of time.

[c16] 16.The method of claim 15, wherein the predetermined amount of time is at least 1 second.

- [c17] 17.The method of claim 15, further comprising forming an air gap between the first and second arm portions to stop propagation of the first magnetic field through the first and second arm portions.
- [c18] 18.The method of claim 12, wherein the first block is disposed substantially in a central region of the plurality of substantially non-magnetized blocks disposed on the plate.
- [c19] 19.The method of claim 12, wherein the second arm portion operably contacts the plate.
- [c20] 20.The method of claim 12, wherein a second electromagnetic coil is coupled to the second arm, the method further comprising energizing the second electromagnetic coil to generate a second magnetic field that propagates from the second electromagnetic coil through the first and second arm portions and the first non-magnetized block and the plate to magnetize the first block.